

**REMARKS****Summary of the Office Action**

Claims 1-14 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Won et al. (US 6,330,148 B1) in view of Takahashi et al. (US 5,889,572) and further in view of Summers et al. (US 5,909,359).

Claims 15-20 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Won et al.

Claims 15 and 16 are objected to for various informalities.

**Summary of the Response to the Office Action**

Applicant has amended the specification and the claims to correct minor typographical errors. Claims 1-20 are pending for further consideration.

**Objection to Claims 15 and 16**

Claims 15 and 16 are objected to for various informalities. Applicant has amended claims 15 and 16 in accordance with the Examiner's comments. Accordingly, Applicant respectfully requests withdrawal of the objection to claims 15 and 16.

**All Claims Define Allowable Subject Matter**

Claims 1-14 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Won et al. (US 6,330,148 B1) in view of Takahashi et al. (US 5,889,572) and further in view of Summers et al. (US 5,909,359), and claims 15-20 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Won et al. Applicant traverses these rejections for the following reasons.

With regard to independent claim 1, as amended, none of Won et al., Takahashi et al. and Summers et al., whether taken alone or in combination, teach or suggest at least the claimed combination comprising a first printed circuit board and a second printed circuit board mounted on and electrically connected to the first printed circuit board, wherein both the first and second printed circuit boards contain driving circuit elements.

The Office Action recognizes that “Won et al. does not appear to have two printed circuit boards” and, therefore would lack a second printed circuit board, as claimed. Takahashi et al. is relied upon by the Office Action for teaching at least two printed circuit boards that are electrically connected to each other. Specifically, the Office Action alleged that the printed circuit board 610, or 600B of Takahashi et al. is the “first printed circuit board” as claimed and that flexible interconnect board 700 of Takahashi et al. is a “second circuit board” as claimed. Applicant respectfully disagrees.

Specifically, in Takahashi et al. (col. 2, lines 51-55), the flexible interconnect board 700 merely electrically interconnects printed circuit boards 600B and 610. Accordingly, the flexible interconnect board 700 merely includes electrically conductive lines, and should not be considered to be a printed circuit board.

Applicant notes that the Office Action does not rely on Summers et al. to teach or suggest these features. Moreover, Applicant respectfully submits that Summers et al. cannot remedy this deficiency.

Applicant respectfully asserts that independent claim 15 is allowable for at least reasons similar to those presented above with respect to independent claim 1. In accordance with the

claimed invention, driving circuits formed on the control PCB can be repaired or exchanged without additional complication and contamination, as discussed, for example, at paragraph [0060].

M.P.E.P. § 2143.03 instructs that “[t]o establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 409 F.2d 981, 180 USPQ 580 (CCPA 1974).” Accordingly, because the applied art, whether taken singly or combined, does not teach or suggest **all the claim limitations**, Applicant respectfully asserts that the Office Action has not established a *prima facie* case of obviousness. Applicant further asserts that dependent claims 2-14 and 16-20 are allowable at least because of their respective dependence from independent claims 1 and 15, respectively.

For at least the reasons presented above, Applicant respectfully requests reconsideration and withdrawal of the rejections of claims 1-20 under 35 U.S.C. § 103(a).

### CONCLUSION

In view of the foregoing, Applicants respectfully request reconsideration and the timely allowance of all pending claims. Should the Examiner feel that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicants’ undersigned representative to expedite prosecution.

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Application No.: 09/892,789

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Attached hereto is a marked-up version of the changes made by the current amendment.

The attachment is captioned "**VERSION WITH MARKINGS TO SHOW CHANGES MADE.**"

If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0310. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such an extension is requested, and the fee should also be charged to our Deposit Account.

Respectfully submitted,

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Dated: January 22, 2003

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**VERSION WITH MARKINGS TO SHOW CHANGES MADE****IN THE SPECIFICATION:**

Paragraph [0059] has been amended as follows:

--In an exemplary configuration, the coupling segments and notches couple the control PCB with the lower frame. The coupling segments and notches may alternatively be substituted with screws and screw holes or the like. In addition, though the coupling segment of the ~~illustrated~~ illustrated configuration is integrally formed with the lower frame, the coupling segment may be formed independently of the lower frame such to be removable from the lower frame.--

Paragraph [0030] has been amended as follows:

--FIG. 11 is a plan view illustrating an exemplary second printed circuit board according to the present invention;--

Paragraph [0037] has been amended as follows:

-- The upper substrate (not shown) of the liquid crystal panel 210 has a color filter, a black matrix, and a common electrode. The color filter colors light radiating from the back light unit 240 into the liquid crystal layer of the liquid crystal panel 210. The black matrix blocks needless portions of the light. The lower substrate (not shown) of the liquid crystal panel 210 has a switching element and a pixel electrode. A thin film transistor (TFT) is ~~[preferably]~~

preferably used as the switching electrode. Together with the common electrode of the upper substrate, the pixel electrode applies an electric field to the liquid crystal layer. The liquid crystal panel 210 further has an upper polarizer (not shown) and a lower polarizer (not shown) respectively formed on the upper substrate and the lower substrate.--

IN THE CLAIMS:

Claim 1 has been amended as follows:

1.(Amended) A liquid crystal display module, comprising:  
a liquid crystal panel including an upper substrate, a lower substrate, and a liquid crystal layer interposed between the upper and lower substrates;  
a first frame on which a first printed circuit board and a second printed circuit board are [formed] disposed, both the first and second printed circuit boards contain driving circuit elements; and  
a second frame coupled with the first frame such that the liquid crystal panel is fixed between the first and second frames,  
wherein the first printed circuit board is [formed] mounted on the first frame and is electrically connected with the liquid crystal panel, the second printed circuit board is [formed] mounted on [the first frame] and [is] electrically connected to the first printed circuit board to drive the liquid crystal panel, and the second printed circuit board being removable from the first printed circuit board and the first frame.

Claim 15 has been amended as follows:

15.(Amended) A liquid crystal display device, comprising:

- an upper substrate;
- a lower substrate;
- a liquid crystal layer interposed between the upper substrate and the lower substrate;
- a backlight disposed on one of the upper substrate and lower substrate; [and]
- at least one first printed circuit board;
- at least one second printed circuit board mounted onto the at least one first printed circuit board, and
- wherein driving circuitry [is] elements are disposed on each of the first and second printed circuit [board] boards.

Claim 16 has been amended as follows:

16.(Amended) The liquid crystal display device according to claim 15, wherein the at least one first printed circuit board [is divided into] includes a source printed circuit board and the at least one second printed circuit board includes a control printed circuit board.